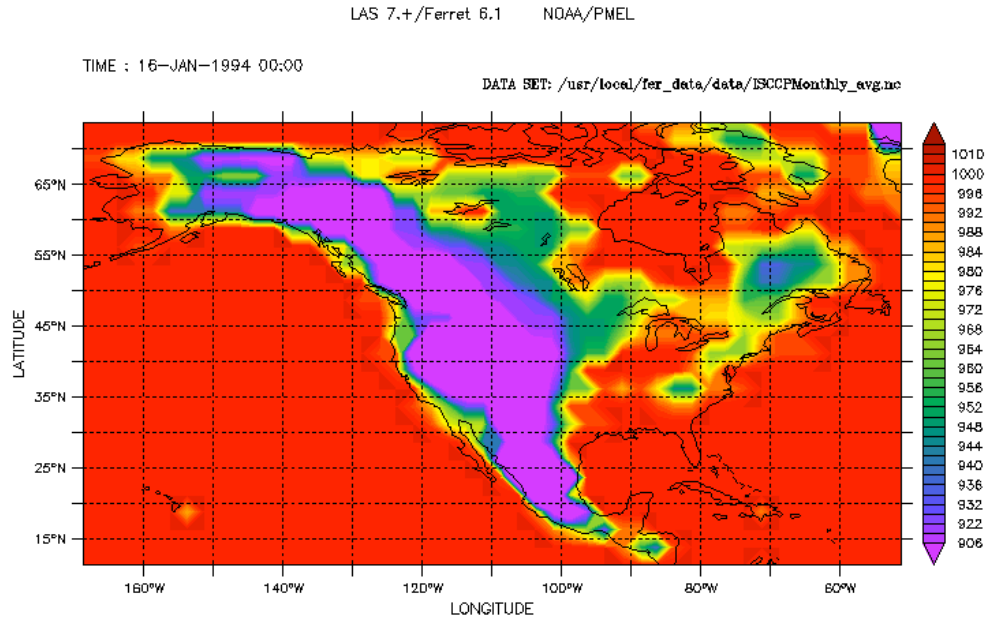


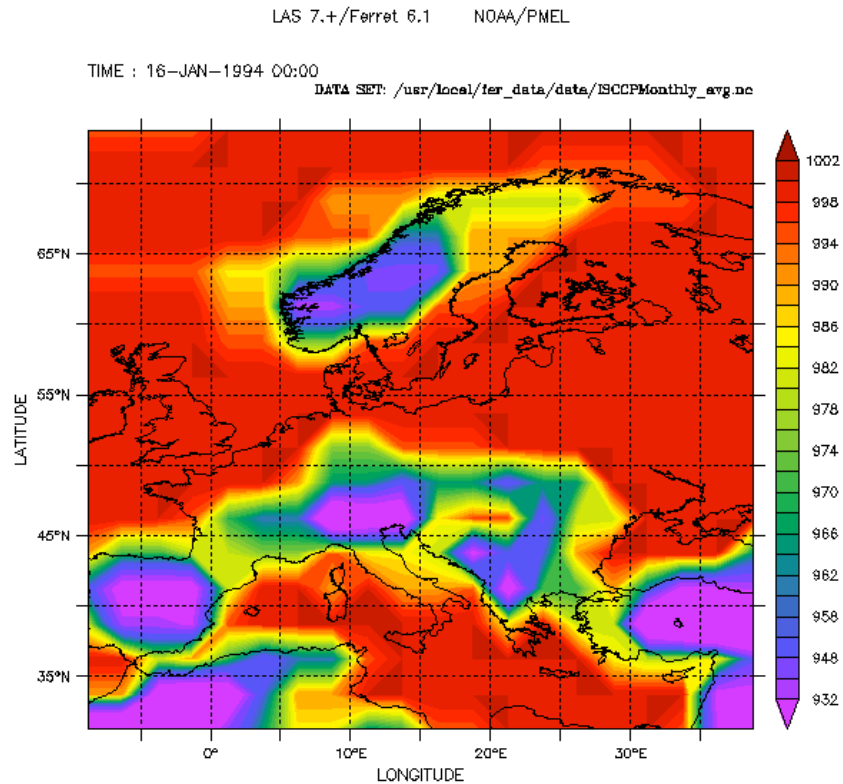
Lesson 40-Atmospheric Pressure vs. Elevation (79)

Possible Examples:

North America:



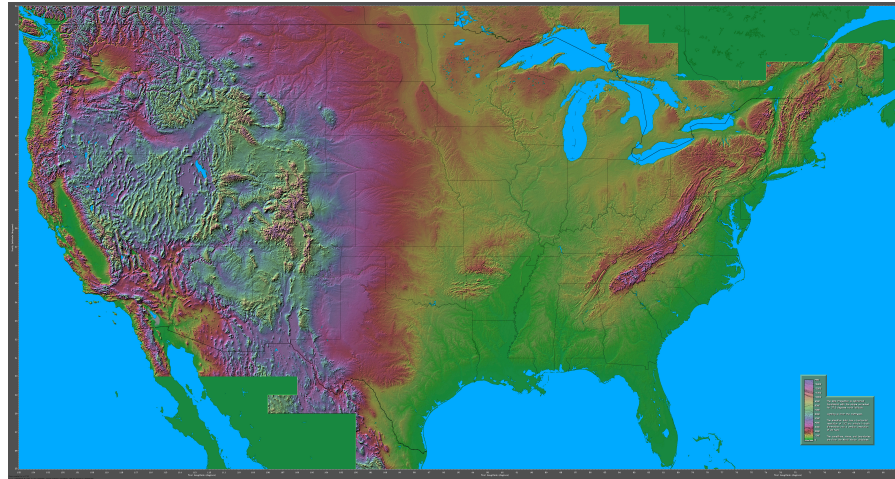
Europe:



Questions:

1. How does your data map compare to your relief map?

Students should find a relief map of the area they chose to graph with LAS, such as this map from <http://birrell.org/andrew/reliefMaps/> Students should observe patterns in the data, such as: A



higher elevation on the western half of the United States which corresponds to the lower surface pressure (shown by the purple color on the chart above) on the western half of the USA.

2. Can you locate any mountain ranges or other topographic features?

Students should choose a relief map with a clear label description so that they can tell what the different colors on the relief map symbolize. Then they should be able to identify the areas of higher elevation, showing the mountain ranges (for example, in the above United States example students should identify the mountains of the west coast and the smaller Appalachian mountains along the east coast. Other topographic areas of interest could be the plains in the middle of the US, which should be visible through long stretches of flat ground. Other areas, such as Florida, should have land below sea level, which should show up on the topographic map as well.

3. Pick two locations by latitude and longitude that are high and low areas.

Compare the pressure and elevation measurements. How are they different?

Answers vary depending on locations chosen. For example, if the location has a higher elevation it will have a lower pressure in comparison to the location with the lower elevation.

4. Discuss how the data proves that pressure decreases with height.

This data should correctly show that the higher elevation location has a lower pressure, or that pressure decreases with height.

Extensions:

1. Use Internet or textbook resources to find out how to adjust atmospheric pressure for elevation effects (mathematically bring to sea level pressure).

This information can be found in textbooks or using some of the resources listed in the Lesson Links, such as “NASA on Air pressure” and “Table of Values on Pressure and Elevation”.

2. Use Internet resources to find the weather station nearest you. Determine the station's elevation. Examine the record of atmospheric pressure over time.

An example is, the NASA Langley Resource Center in Hampton, Virginia. The nearest weather station is Langley Air Force Base, with an elevation of 10 ft. A good resource for teachers to use is <http://www.wunderground.com/wundermap/>.